

Crestone Peak Resources

DJ BASIN

S18-T1N-R67W (HINGLEY)

HINGLEY 1I-18H-A167

OH

PLAN #2

Anticollision Summary Report

19 January, 2018

Cathedral Energy Services

Anticollision Summary Report

Company:	Crestone Peak Resources	Local Co-ordinate Reference:	Well HINGLEY 11-18H-A167 - Slot Hingley 11-18H-A167 SHL
Project:	DJ BASIN	TVD Reference:	23' KB @ 5081.00usft
Reference Site:	S18-T1N-R67W (HINGLEY)	MD Reference:	23' KB @ 5081.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	HINGLEY 11-18H-A167	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2	Offset TVD Reference:	Offset Datum

Reference	PLAN #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.00 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	1/19/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	2,000.00	PLAN #2 (OH)	VESSI_GYROFLEX	VESSI Gyroflex Gyro
2,001.00	12,535.91	PLAN #2 (OH)	MWD+HDGM	OWSG MWD + HDGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S18-T1N-R67W (HINGLEY)						
22-24 - KAISER-FRANCIS OIL - NO SURVEYS						Out of range
B C HOPKINS 3 - FRITZLER WELL - NO SURVEYS						Out of range
B C HOPKINS 4 - FRITZLER WELL - NO SURVEYS						Out of range
BLANCHE C 4 - KPK WELL - NO SURVEYS						Out of range
BLANCHE C HOPKINS 1 - KPK WELL - NO SURVEYS						Out of range
BLANCHE C HOPKINS 2 - KPK WELL - NO SURVEYS						Out of range
DACONO 16-13 - KMG WELL - GYRO						Out of range
EMERY31-13(1-68) 1 - NOBLE WELL - NO SURVEYS						Out of range
FOREMAN 1 - KPK WELL - NO SURVEYS						Out of range
FOREMAN 2 - KPK WELL - NO SURVEYS						Out of range
FOREMAN 3 - KPK WELL - SURVEYS						Out of range
FOREMAN UNIT 4 - KPK WELL - SURVEYS						Out of range
GRAHAM ELIZABETH W 1 - KMG WELL - NO SURVEY						Out of range
GRIFFITHS 13C-20HZX - KMG STK - SURVEYS						Out of range
GRIFFITHS 13C-20HZX - KMG WELL - SURVEYS						Out of range
GRIFFITHS 14N-20HZ - KMG WELL - SURVEYS						Out of range
GRIFFITHS 34N-20HZ - KMG WELL - SURVEYS	5,180.15	5,213.67	734.23	712.38	33.600	CC
GRIFFITHS 34N-20HZ - KMG WELL - SURVEYS	12,536.08	12,091.32	806.29	697.22	7.392	ES, SF
GRIFFITHS 35C-20HZ - KMG WELL - SURVEYS						Out of range
GRIFFITHS 35N-20HZ - KMG WELL - SURVEYS						Out of range
GRIFFITHS 36C-20HZ - KMG WELL - SURVEYS						Out of range
HALEY 41-13 #1 - KMG WELL - NO SURVEYS						Out of range
HART 7-42 - KMG WELL - NO SURVEYS						Out of range
HERBERS 31-20 - CPR WELL - GYRO						Out of range
HICKS 13-18 - KPK WELL - NO SURVEYS						Out of range
HICKS 14-18 - BAYSWATER WELL - NO SURVEYS						Out of range
HICKS 23-18 - STARLIGHT WELL - NO SURVEYS						Out of range
HICKS 24-18 - BAYSWATER WELL - NO SURVEYS						Out of range
HICKS 4-18 - CPR WELL - GYRO						Out of range
HINGLEY 1 - CPR WELL - GYRO	8,643.73	7,688.23	565.77	526.91	14.559	CC, ES
HINGLEY 1 - CPR WELL - GYRO	8,700.00	7,688.25	568.56	529.28	14.473	SF
HINGLEY 12-18 - PDC WELL - GYRO						Out of range
HINGLEY 1A-18H-A167 - OH - PLAN #2	150.00	146.00	80.00	79.70	264.951	CC
HINGLEY 1A-18H-A167 - OH - PLAN #2	200.00	196.00	80.04	79.56	167.967	ES
HINGLEY 1A-18H-A167 - OH - PLAN #2	4,200.00	4,058.50	983.90	965.33	52.993	SF

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

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Reference Well:	HINGLEY 11-18H-A167	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2	Offset TVD Reference:	Offset Datum

Summary						
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S18-T1N-R67W (HINGLEY)						
HINGLEY 1-B - VESSELS WELL - NO SURVEYS						Out of range
HINGLEY 1B-18H-A167 - OH - PLAN #2	150.00	147.00	70.00	69.70	230.500	CC
HINGLEY 1B-18H-A167 - OH - PLAN #2	200.00	203.00	70.04	69.55	143.304	ES
HINGLEY 1B-18H-A167 - OH - PLAN #2	4,800.00	4,679.96	981.57	958.54	42.636	SF
HINGLEY 1C-18H-A167 - OH - PLAN #2	150.00	147.00	60.00	59.70	197.571	CC
HINGLEY 1C-18H-A167 - OH - PLAN #2	200.00	203.00	60.04	59.55	122.843	ES
HINGLEY 1C-18H-A167 - OH - PLAN #2	800.00	787.83	97.65	95.05	37.524	SF
HINGLEY 1D-18H-A167 - OH - PLAN #2	150.00	147.00	50.00	49.70	164.643	CC
HINGLEY 1D-18H-A167 - OH - PLAN #2	200.00	197.00	50.04	49.56	104.627	ES
HINGLEY 1D-18H-A167 - OH - PLAN #2	5,900.00	5,806.77	983.02	951.75	31.438	SF
HINGLEY 1E-18H-A167 - OH - PLAN #2	150.00	148.00	40.00	39.69	130.962	CC
HINGLEY 1E-18H-A167 - OH - PLAN #2	200.00	202.00	40.04	39.55	82.216	ES
HINGLEY 1E-18H-A167 - OH - PLAN #2	12,536.08	12,504.66	984.28	828.10	6.302	SF
HINGLEY 1F-18H-A167 - OH - PLAN #2	150.00	148.00	30.00	29.69	98.221	CC
HINGLEY 1F-18H-A167 - OH - PLAN #2	200.00	202.00	30.04	29.55	61.683	ES
HINGLEY 1F-18H-A167 - OH - PLAN #2	12,536.08	12,712.90	827.68	673.08	5.354	SF
HINGLEY 1G-18H-A167 - OH - PLAN #2	150.00	149.00	20.00	19.69	65.109	CC
HINGLEY 1G-18H-A167 - OH - PLAN #2	200.00	199.00	20.04	19.56	41.599	ES
HINGLEY 1G-18H-A167 - OH - PLAN #2	12,536.08	12,560.81	659.94	503.27	4.212	SF
HINGLEY 1H-18H-A167 - OH - PLAN #2	150.00	149.00	10.00	9.69	32.554	CC
HINGLEY 1H-18H-A167 - OH - PLAN #2	200.00	201.00	10.04	9.56	20.700	ES
HINGLEY 1H-18H-A167 - OH - PLAN #2	12,536.08	12,450.37	371.61	218.47	2.427	SF
HINGLEY 1J-18H-A167 - OH - PLAN #2	218.31	218.30	9.97	9.42	18.199	CC, ES
HINGLEY 1J-18H-A167 - OH - PLAN #2	12,536.08	12,682.81	278.82	138.25	1.984	SF
HINGLEY 1K-18H-A167 - OH - PLAN #2	210.00	210.00	19.96	19.44	38.492	CC, ES
HINGLEY 1K-18H-A167 - OH - PLAN #2	12,536.08	12,451.95	352.94	200.01	2.308	SF
HINGLEY 2J - PDC WELL - GYRO						Out of range
HINGLEY 2S - TEXAS TEA WELL - NO SURVEYS	150.00	146.00	200.34	199.99	570.994	CC, ES
HINGLEY 2S - TEXAS TEA WELL - NO SURVEYS	5,000.00	4,881.00	726.10	703.70	32.408	SF
HINGLEY 3A-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3B-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3C-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3D-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3E-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3F-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3G-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3H-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3I-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3J-18H-N167 - OH - PLAN #1						Out of range
HINGLEY 3K-18H-N167 - OH - PLAN #2						Out of range
HINGLEY 3S - TEXAS TEA WELL - NO SURVEYS						Out of range
HINGLEY 4 - DENVER EAST WELL - NO SURVEYS						Out of range
HINGLEY 5 - DENVER EAST WELL - NO SURVEYS						Out of range
HINGLEY FARMS 32-18 - CPR WELL - GYRO						Out of range
HOPKINS 3 - KPK WELL - NO SURVEYS						Out of range
HOPKINS 32-19 1 - FRITZLER RESOURCES - NO SUR						Out of range
HOPKINS 41C-19#2 - FRITZLER RESOURCES - NO SU						Out of range
HSR RMF 12-8 - KMG WELL - NO SURVEYS						Out of range
JELTS 15C-19HZ - KMG WELL - SURVEYS						Out of range
JELTS 16N-19HZ - KMG WELL - SURVEYS	12,536.08	7,388.00	829.24	783.28	18.042	CC, ES, SF
JELTS 36N-19HZ - KMG WELL - SURVEYS						Out of range
JELTS 37C-19HZ - KMG WELL - SURVEYS	12,536.08	7,579.36	899.70	826.96	12.369	CC, ES, SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

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Site Error:	0.00 usft	North Reference:	True
Reference Well:	HINGLEY 11-18H-A167	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
S18-T1N-R67W (HINGLEY)						
JELTS 37N-19HZ - KMG WELL - SURVEYS						Out of range
JELTS 39C-19HZ - KMG WELL - SURVEYS	12,536.08	7,571.56	776.91	716.28	12.814	CC, ES, SF
JOHNSON 21-24 - MGF OIL CORP WELL - NO SURVE						Out of range
LAURIDSON 18-16 - KMG WELL - GYRO	12,248.30	7,766.69	260.68	173.17	2.979	CC, ES, SF
LAURIDSON 2-A - KPK WELL - NO SURVEYS						Out of range
LAURIDSON 31-24 - KPK WELL - NO SURVEYS						Out of range
LAURIDSON 32-24 - SRC ENERGY WELL - NO SURVE						Out of range
LAURIDSON 41-24 - STARLIGHT RES WELL - NO SUR						Out of range
LAURIDSON 42-24 - KPK WELL - NO SURVEYS						Out of range
LAURIDSON VV 18-10 - KMG WELL - GYRO						Out of range
LAURIDSON VV18-4J - KMG WELL - GYRO						Out of range
LAURIDSON-A 1 - KPK WELL - NO SURVEYS						Out of range
LINKUS 32-24 - PDC WELL - NO SURVEYS						Out of range
LINKUS 41-24 - PDC WELL - GYRO						Out of range
M B SCHWAB 2 - KMG WELL - NO SURVEYS						Out of range
MARGUERITE TOTEMS U 2 - KMG WELL - GYRO						Out of range
MARK 1-A - CHAPARRAL RES - NO SURVEYS						Out of range
NRC 11-8 - KMG WELL - SURVEYS						Out of range
NRC 12-8 - KMG WELL - SURVEYS						Out of range
NRC 13-8 - KMG WELL - SURVEYS						Out of range
NRC 14-8 - KMG WELL - SURVEYS						Out of range
NRC 15-8 - KMG WELL - SURVEYS						Out of range
NRC 22-8 - KMG WELL - SURVEYS						Out of range
NRC 23-8 - KMG WELL - SURVEYS						Out of range
NRC 28N-8HZ - KMG WELL - SURVEYS						Out of range
NRC 29N-8HZ - KMG WELL - SURVEYS						Out of range
NRC 30C-8HZ - KMG WELL - SURVEYS	7,905.53	7,931.39	555.99	520.94	15.863	CC, ES
NRC 30C-8HZ - KMG WELL - SURVEYS	7,950.00	7,900.17	556.96	521.77	15.829	SF
NRC 35-8 - KMG WELL - SURVEYS						Out of range
NRC 3C-8HZ - KMG WELL - SURVEYS						Out of range
NRC 4C-8HZ - KMG WELL - SURVEYS						Out of range
NRC 4N-8HZ - KMG WELL - SURVEYS						Out of range
PAUL HEINZE 1 - KPK WELL - NO SURVEYS						Out of range
RALPH 13C-19HZ - KMG WELL - SURVEYS						Out of range
RALPH 14N-19HZ - KMG WELL - SURVEYS						Out of range
RALPH 34C-19HZ - KMG WELL - SURVEYS						Out of range
RALPH 35C-19HZ - KMG WELL - SURVEYS						Out of range
RALPH 35N-19HZ - KMG WELL - SURVEYS						Out of range
RALPH 36C-19HZ - KMG WELL - SURVEYS						Out of range
ROCKY MOUNTAIN FUEL 1 - KMG WELL - NO SURVE						Out of range
SCHWAB #1-32-13 - KMG WELL - NO SURVEYS						Out of range
STONEBRAKER 24-12 - KMG WELL - SURVEYS						Out of range
STONEBRAKER 25-12 - KMG WELL - SURVEYS						Out of range
STONEBRAKER 8-12 - KMG WELL - SURVEYS						Out of range
TROUDT 44-7 - KMG WELL - GYRO	7,017.16	6,940.76	246.42	215.76	8.036	CC, ES
TROUDT 44-7 - KMG WELL - GYRO	7,050.00	6,972.84	247.21	216.38	8.019	SF
UNDERHILL 28N-17HZ - KMG WELL - SURVEYS						Out of range
UPRR 42 PAN AM 'AL' 1 - KMG WELL - GYRO						Out of range
UPRR 42 PAN AM GAS 1 - KMG WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM N #2 - KPK WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM N 1 - KMG WELL - GYRO						Out of range
UPRR 42 PAN AM N 4 - KPK WELL - NO SURVEYS						Out of range

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Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2	Offset TVD Reference:	Offset Datum

Summary						
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S18-T1N-R67W (HINGLEY)						
UPRR 42 PAN AM-AJ 1 - KPK WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM-AJ 4 - KPK WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM-AS 1 - KMG WELL - GYRO						Out of range
UPRR 42 PAN AM-AV 1 - KPK WELL - SURVEYS						Out of range
UPRR 42 PAN AM-J 2 - KPK WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM-J 3 - KPK WELL - NO SURVEYS						Out of range
UPRR 42 PAN AM-N 3 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM 1 2 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM 1 3 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM H 10 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM H 2 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM I #5 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM M TRUE #1 - KMG WELL - GYRO						Out of range
UPRR 43 PAN AM O 1 - KMG WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM-H 7 - AMOCO WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM-I 14 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM-I 15 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM-I 26 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM-I 31 - KPK WELL - NO SURVEYS						Out of range
UPRR 43 PAN AM-J 1 - KMG WELL - NO SURVEYS						Out of range
UPRR PAN AM H 3 - KPK WELL - NO SURVEYS						Out of range
UPRR43PANAM-I 16 - KPK WELL - NO SURVEYS						Out of range

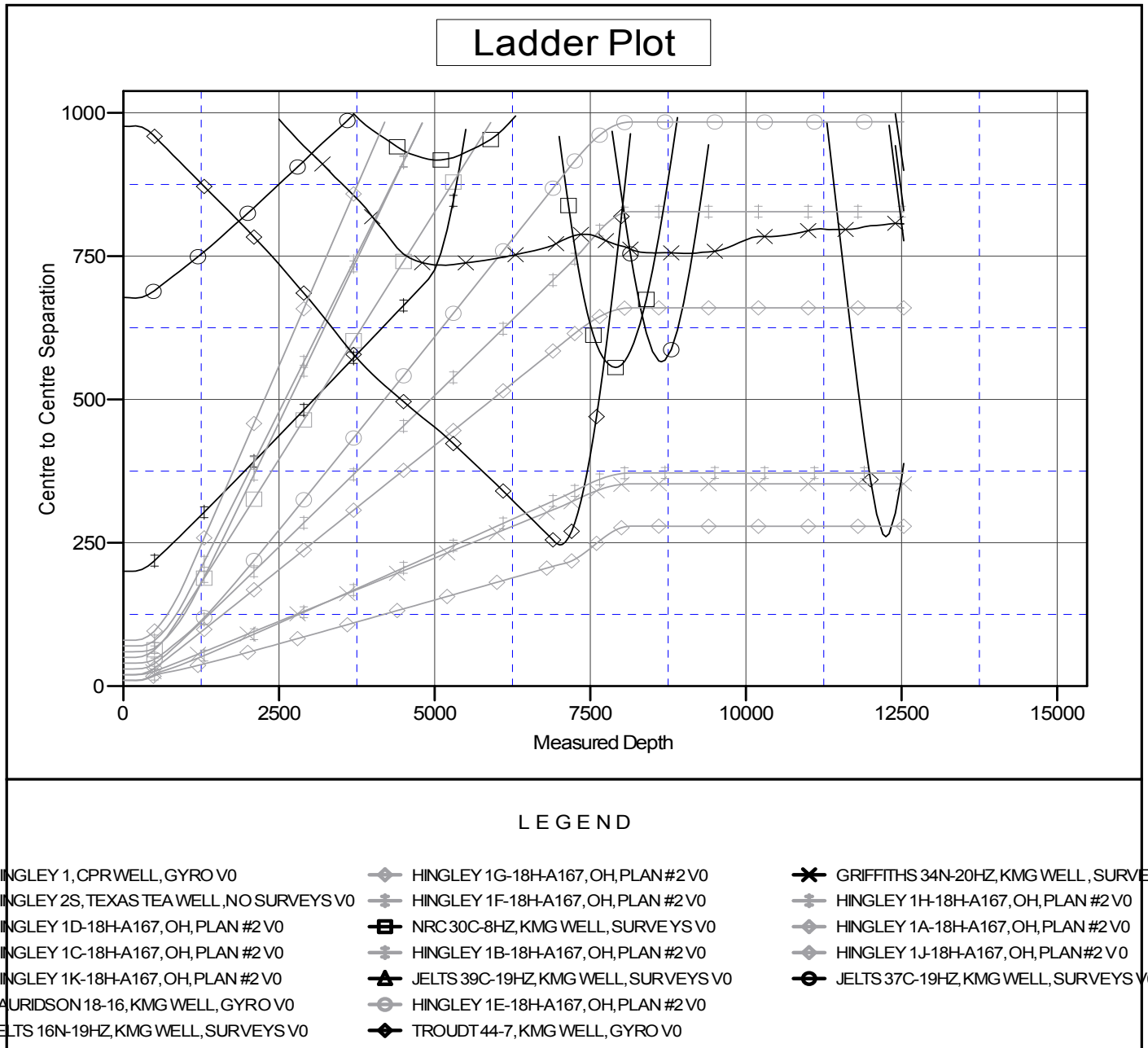
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Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 23' KB @ 5081.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: HINGLEY 1I-18H-A167 - Slot Hingley 1I-18H-A167 SH
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.37°



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